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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/791,026	03/01/2004	Wayne Chen	TNCR.178US2	1277
36257	7590	05/17/2005	EXAMINER	
PARSONS HSUE & DE RUNTZ LLP 655 MONTGOMERY STREET SUITE 1800 SAN FRANCISCO, CA 94111			STAFIRA, MICHAEL PATRICK	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 05/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/791,026

Applicant(s)

CHEN ET AL.

Examiner

Michael P. Stafira

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 50,53-72 and 75-127 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 50,53-72 and 75 is/are allowed.
- 6) ☒ Claim(s) 76,77,80,81,83,85,94-99,102,103,106,107,109,111 and 120-125 is/are rejected.
- 7) ☒ Claim(s) 78,79,82,84,86-93,100,101,104,105,108,110,112-119,126 and 127 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claim 53 is objected to because of the following informalities: In claim 53 the dependency needs to be changed for "52" to --50--. Further in claim 72, line 21 there are two "at". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 76, 77, 80, 81, 83, 85, 94-99, 102, 103, 106, 107, 109, 111, 120-125 are rejected under 35 U.S.C. 103(a) as being unpatentable over McKaughan et al. ('129) in view of Marxer et al. ('916).

#### **Claim 76**

McKaughan et al. ('129) discloses supplying a beam of radiation (Fig. 1, Ref. 20) to an area of the surface (Fig. 1, Ref. 14); detecting radiation (Fig. 1, Ref. 10, 12) from the anomalies associated with the area of the surface (Fig. 1, Ref. 14) to provide an output corresponding to the area by means of a detector; and analyzing the detector output for anomalies and classifying the anomalies (See Abstract); wherein the analyzing uses more than one threshold to analyze the detector output and to arrive at least one classification of the anomalies (Col. 7, lines 1-35).

McKaughan et al. ('129) substantially teaches the claimed invention except that it does not show that the relative motion between the beam and the surface is a spiral path on the surface. Marxer et al. ('916) shows that it is known to provide a spiral path scan on the surface (See Abstract) for an object inspection apparatus. It would have been obvious to combine the device of McKaughan et al. ('129) with the spiral scanning of Marxer et al. ('916) for the purpose of providing an accurate scan of a surface that is rotating, therefore decreasing the amount of time needed to completely scan the surface.

**Claim 77**

McKaughan et al. ('129) discloses processing the detector output with a first threshold, and classifying the anomalies in a first classification (Col. 10, lines 38-63), and said analyzing and classifying analyzing the output with a second threshold different from the first threshold (Col. 12, lines 1-5).

**Claim 80, 106**

McKaughan et al. ('129) further discloses characterizing anomalies in the at least one classification as elongated anomalies (Col. 4, lines 52-62).

**Claim 81, 107**

McKaughan et al. ('129) further discloses the elongated anomalies include macroscratches and-microscratches (Col. 4, lines 54-56).

**Claim 83, 109**

McKaughan et al. ('129) further discloses the analyzing is performed by means of a processing system and wherein a first threshold used in analyzing anomalies is the lowest practical threshold of the system (Col. 5, lines 6-38).

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**Claim 85, 111**

McKaughan et al. ('129) further discloses displaying only anomalies of sizes that exceed a predetermined value (See Fig. 4).

**Claim 94, 120**

McKaughan et al. ('129) discloses directing a beam of radiation along a direction to the surface (See Fig. 1).

**Claim 95, 121**

McKaughan et al. ('129) further discloses the detecting detects radiation scattered by the anomalies (See Fig. 1).

**Claim 96, 122**

McKaughan et al. ('129) further discloses detecting detects radiation scattered by the anomalies along a direction away from a specular reflection direction of the beam by the surface (See Fig. 1).

**Claim 97, 123**

McKaughan et al. ('129) further discloses controlling a sample processing parameter in response to the at least one classification (Col. 5, lines 35-38).

**Claim 98**

McKaughan et al. ('129) discloses supplying radiation to an area of the surface (See Fig. 1); detecting radiation from the anomalies associated with the area of the surface to provide an output corresponding to the area by means of a detector (Fig. 1, Ref. 10 & 12); analyzing the detector output for anomalies and classifying the anomalies (Col. 4, lines 52-62); and providing classification information concerning classification of anomalies of the surface (Col. 10, lines

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37-47); wherein the analyzing and classifying analyzes the detector output and uses the classification information to arrive at least one classification of the anomalies (Col. 4, lines 52-62).

McKaughan et al. ('129) substantially teaches the claimed invention except that it does not show that the relative motion between the beam and the surface is a spiral path on the surface. Marxer et al. ('916) shows that it is known to provide a spiral path scan on the surface (See Abstract) for an object inspection apparatus. It would have been obvious to combine the device of McKaughan et al. ('129) with the spiral scanning of Marxer et al. ('916) for the purpose of providing an accurate scan of a surface that is rotating, therefore decreasing the amount of time needed to completely scan the surface.

#### **Claim 99**

McKaughan et al. ('129) discloses processing the detector output with a first threshold, and classifying the anomalies in a first classification (Col. 10, lines 38-63), and said analyzing and classifying analyzing the output with a second threshold different from the first threshold (Col. 12, lines 1-5).

#### **Claim 102**

McKaughan et al. ('129) discloses supplying beam of radiation (Fig. 1, Ref. 20) to an area of the surface (Fig. 1, Ref. 14); detecting radiation from the anomalies associated with the area of the surface to provide an output corresponding to the area by means of a detector (Fig. 1, Ref. 10, 12); and analyzing the detector output for anomalies and classifying the anomalies (Col. 10, lines 37-47); wherein the analyzing uses more than one threshold to analyze the detector output and to arrive at least one classification of the anomalies (Col. 6-7, lines 62-35).

McKaughan et al. ('129) substantially teaches the claimed invention except that it does not show that the relative motion between the beam and the surface is smaller than the dimensions on the surface. Marxer et al. ('916) shows that it is known to provide a spiral path scan on the surface (See Abstract) for an object inspection apparatus. It would have been obvious to combine the device of McKaughan et al. ('129) with the spiral scanning of Marxer et al. ('916) for the purpose of providing an accurate scan of a surface that is rotating, therefore decreasing the amount of time needed to completely scan the surface.

**Claim 103, 125**

McKaughan et al. ('129) further discloses processing the output with a first threshold (Col. 10, lines 38-63), and classifying the anomalies in a first classification and analyzing the output with a second threshold different from the first threshold (Col. 12, lines 1-12).

**Claim 120**

McKaughan et al. ('129) further discloses directing a beam of radiation along a direction to the surface (See Fig. 1).

**Claim 124**

McKaughan et al. ('129) discloses supplying radiation to an area of the surface (See Fig. 1); detecting radiation from the anomalies associated with the area of the surface to provide an output corresponding to the area by means of a detector (Fig. 1, Ref. 10 & 12); analyzing the detector output for anomalies and classifying the anomalies (Col. 4, lines 52-62); and providing classification information concerning classification of anomalies of the surface (Col. 10, lines 37-47); wherein the analyzing and classifying analyzes the detector output and uses the

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classification information to arrive at least one classification of the anomalies (Col. 4, lines 52-62).

McKaughan et al. ('129) substantially teaches the claimed invention except that it does not show that the relative motion between the beam and the surface is smaller than the dimensions on the surface. Marxer et al. ('916) shows that it is known to provide a spiral path scan on the surface (See Abstract) for an object inspection apparatus. It would have been obvious to combine the device of McKaughan et al. ('129) with the spiral scanning of Marxer et al. ('916) for the purpose of providing an accurate scan of a surface that is rotating, therefore decreasing the amount of time needed to completely scan the surface.

*Allowable Subject Matter*

3. Claims 50, 54-72, 75 allowed over the prior art of record.
4. Claims 53, 78-79, 82, 84, 86-93, 100, 101, 104, 105, 108, 110, 112-119, 126, 127 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
5. The following is an examiner's statement of reasons for allowance:

Regarding claim 50, the prior art fails to disclose or make obvious a method for detecting and classifying anomalies of a surface of a sample of a material suitable for use as a substrate for storage, display or electronic device having the steps of analyzing uses more than one threshold to analyze the detector output and to arrive at least one classification of the anomalies, said analyzing and classifying comprising processing the output with a first threshold, and classifying the anomalies in a first classification and analyzing the output with a second threshold different

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from the first threshold. said classifying including applying algorithms to test relationship between anomalies, if any, wherein the output is analyzed with a second threshold without applying the algorithm to test relationship between anomalies, and in combination with the other recited limitations of claim 50. Claims 53-71 are allowed by the virtue of dependency on the allowed claim 50.

Regarding claim 72, the prior art fails to disclose or make obvious a method for detecting and classifying anomalies of a surface of a sample having the steps of processing the detector output with a first thresholds and classifying the anomalies in a first classification; wherein the analyzing and classifying analyzes the detector output and uses the classification information to arrive at least one classification of the anomalies, said analyzing and classifying also analyzing the output with a second threshold different from the first threshold, said providing including applying algorithm to test relationship between the anomalies if any wherein said analyzing and classifying analyze the detector output with a second threshold without applying the algorithm to test relationship between anomalies, and in combination with the other recited limitations of claim 72. Claim 75 is allowed by the virtue of dependency on the allowed claim 72.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Conclusion*

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

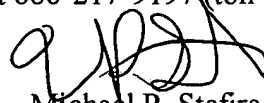
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Michael P. Stafira  
Primary Examiner  
Art Unit 2877

May 13, 2005